

The Defense Nuclear Facilities Safety Board

Professional Development Program Handbook

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Professional Development Program

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A. BACKGROUND

The mission of the Defense Nuclear Facilities Safety Board (Board) is to oversee all activities impacting nuclear safety within the Department of Energy's (DOE) nuclear weapons complex to ensure adequate protection of public health and safety. In the late 1980's, it became increasingly clear to members of Congress that significant public health and safety issues had accumulated at many of the aging facilities in the weapons complex. As an outgrowth of these concerns, Congress created the Board in 1988 as an independent oversight organization charged with protecting the public's health and safety. The Board is composed of five members who are each recognized as experts in the nuclear safety field, and who are appointed by the President and confirmed by the Senate.

The Board is responsible for reviewing and analyzing facility and system design, operations, practices and events, as well as the content and implementation of health and safety standards, including DOE's Orders, rules and other safety requirements relating to the design, construction, operations and decommissioning of DOE's defense nuclear facilities. It may also conduct investigations, issue subpoenas, hold public hearings, gather information, conduct studies, establish reporting requirements for DOE, and take other actions in furtherance of its health and safety mission.

Based on the findings of Board reviews, it recommends to the Secretary of Energy any specific measures that it believes DOE should adopt to ensure public health and safety, after considering the technical and economic feasibility of implementing the recommended measures.

B. OVERVIEW OF THE PROFESSIONAL DEVELOPMENT PROGRAM

The Professional Development Program is a 3-year program. Exceptions may be made to shorten or lengthen the program based on the individual's background or desire to complete additional specialized training or to acquire new qualifications that will add to his or her effectiveness within the Board while keeping with the overall objectives of the program. Under no circumstances will an individual be kept in the program indefinitely.

The Professional Development Program is designed to recruit, train, and retain high-quality employees who are capable of supporting the Board in carrying out its oversight responsibilities. The Professional Development Program is a means to bring new talent into professional positions within the Board through a series of individually tailored developmental assignments, through formal academic schooling, and an extensive "hands-on" field assignment at one of the Department of Energy (DOE) sites or with a private company, national laboratory or other government agency. New employees are placed in entry-level permanent positions specifically tailored to provide broad developmental training and specialized technical training appropriate to their field (see Appendix A, *Sample of First Year Assignments*). After completion of the 3-year program, the employee is considered a full professional staff member.

C. YEAR ONE

1. Objectives

The primary objective of the first year is to orient the individual to employment in public service generally and the Board specifically. Under the guidance of a senior technical mentor, the first year's fundamental goals include the following:

- # A working knowledge of the Board's mission, organization structure, policies, operation, including the process for the development, issuance and implementation of Board recommendations, reporting requirements, or other forms of Board communication to DOE.
- # An initial working knowledge of system concepts, technical design, operations, and personnel training related to nuclear facilities. This knowledge should include an understanding of the engineering design process, construction, testing, engineering installation, and maintenance related to nuclear facility or plant operations.
- # A familiarity with defense nuclear facilities under the Department of Energy (DOE) including the Headquarters organization, the DOE field offices, chemical processing and separation facilities, waste disposal facilities, national laboratories, nuclear weapon assembly, disassembly, and testing facilities, nuclear land waste management and environmental restoration facilities.
- # A better understanding of the roles and responsibilities of the Board's site representatives. To achieve this understanding, during the second half of the first year, entry-level engineers will spend 2 weeks at one of the DOE sites.
- # A working knowledge of the technical standards, specifications, regulations, rules, policies, orders, and instructions that govern the activities of the defense nuclear facilities under the DOE.
- # Acceptance in a graduate school program appropriate to support the Board's mission.

2. Initial Orientation

During the first week of entering-on-duty with the Board, the Deputy Technical Director or another senior technical staff member will meet with the new employee and explain the *Orientation Schedule for the First Four Weeks* (see Appendix B), and assign the technical readings (see Appendix C, *Technical Reading List*).

3. Choosing a Mentor

During the first week of orientation, the Deputy Technical Director or another Senior Technical Staff member will provide the new employee with a list of potential mentors, and explain the process for selecting one. In addition, the individual who recruited the new employee will be available to offer support and guidance, and will ensure that the new employee understands the expectations of the Technical Director and the Deputy Technical Director.

4. Role of the Mentor

The mentor is not a supervisor, but assumes the role of sponsor, teacher, and counselor, and

will provide assistance and guidance in navigating the employee through the program. Care is taken to match an appropriate mentor to each new employee. Mentors are selected on the basis of their willingness to act in that role, their commitment to employee development, their broad experience, their ability to devote sufficient time to the relationship to ensure adequate opportunities for counseling and discussion, and an ability to assess development needs. Mentors are encouraged to demonstrate openness, candor and a willingness to share concerns and give constructive feedback. Specifically, the mentor helps the employee in tailoring an Individual Development Plan (IDP) (see Appendix D) and advises, encourages, and counsels the employee on any problems that should arise during the Professional Development Program. Employees are encouraged to meet with their mentors regularly. Mentors are responsible for providing a means for success of the employee, regardless of whether or not they have the same educational backgrounds.

5. Role of the Senior Technical Staff

Additional mentoring by experts in the employee's field of study is also available to enhance the professional development and the quality of the new employee's work assignments. Staff members with similar technical backgrounds as the entry-level engineer are able to enhance the first year through special projects and assignments in the individual's field of study.

6. Role of the Supervisor

Normally, the Deputy Technical Director acts as the employee's supervisor during the Professional Development Program. The supervisor has principal responsibility for outlining performance objectives and ultimately providing the employee's written performance appraisal. In conjunction with this responsibility, the supervisor will review the final IDP that the employee and mentor develop to ensure that the employee is pursuing the necessary and appropriate training, course work, and work activities, during the first and second years of the program. The supervisor will guide each employee through the orientation process upon entering-on-duty with the Board to ensure that each employee is given an opportunity to meet and select a mentor from among several senior staff members. The initial focus of the supervisor is to monitor the mentor selection process to avoid any unnecessary delays, and to help the employee integrate smoothly into the technical staff. The supervisor conducts frequent meetings with the employee to ensure that technical assignments are appropriate.

In addition, the supervisor analyzes program activities, makes recommendations for changes, and serves as liaison with the mentors, and other technical staff.

7. Performance Objectives & Appraisals

The supervisor is responsible for communicating the performance elements and standards for which the employee will be evaluated, and will also write the employee's performance appraisal. This appraisal may include summary evaluations by technical staff members cognizant of the employee's work performance during the year. Moreover, if performance elements and standards need to be revised during the appraisal period (this begins July 1 and ends June 30 of each year), it is the supervisor's responsibility to ensure this is accomplished. (See Appendix E, *Sample of Performance Elements and Standards*.)

Progress Reviews are another component of the Performance Appraisal process. Each year, about mid-way through an employee's performance cycle, the employee and supervisor discuss progress. This discussion may also address adjustments to assignments, clarification of performance expectations, resolution of problems, and reinforcement of positive work

behaviors.

8. Individual Development Plans

An Individual Development Plan (IDP) is mandatory for individuals hired under the Professional Development Program. Each IDP is individually tailored to outline an employee's short and long-range objectives, and is directly linked to the individual's performance elements and standards. Typically an IDP includes formal and informal training, development assignments that are mutually agreed upon by the supervisor, mentor and employee. The mentor assists the employee in developing the IDP. The IDP is sufficiently specific to ensure that performance elements will be met, and sufficiently flexible to allow for several alternative learning experiences. Suggested changes to the IDP by the employee or mentor are encouraged when appropriate. The supervisor has final approval authority on an employee's IDP. (A sample IDP is provided as Appendix D).

9. In-House Seminars

During the employee's first year, training seminars are given by various staff members to introduce the new employees to new and relevant topics. Moreover, through these seminars, the employees learn the technical capabilities of the staff, and can begin to build a support network for his or her own assignments. (See Appendix F, *Sample Seminar Schedule*.)

10. Education & Training

The following are potential opportunities for education, training and professional development which should be considered by the employee and respective mentor during the first year.

Education

The following education is not required, but the Board prefers that individuals with non-nuclear engineering backgrounds complete at least two nuclear engineering related university courses during the first year. Courses may be taken at local colleges or universities, through web-based training, or through distance learning such as Georgia Tech and the University of Virginia. The mentor will guide the employee on knowing whether or not he or she needs to enroll in these courses based on a review of the individual's education and experience. If a university course is to be taken, enrollment should be pursued as early as possible, since substantial lead time is required to arrange courses.

At least one graduate level course should be in the area of nuclear engineering with a goal of obtaining basic fundamentals in the areas of radioactivity, core physics, shielding, dose calculation, etc., and a better understanding of the areas that relate to the Board's mission such as, health physics, risk assessment, safety analysis, or waste management.

Training

Radiation Worker II Training and Hazardous Material (HAZMAT) training are required of all new employees. In addition, the mentor will guide the employee on whether or not he or she needs to attend and/or complete other specified training such as:

- The two week Nuclear Regulatory Commission (NRC) course on Power Plant

Engineering in Chattanooga, TN.

- The Engineer-In-Training (EIT) exam if not previously accomplished.
- NRC Self Study Course
- Other DOE or industry training opportunities.

11. Graduate School Application & Selection

Preparation during the first year is key for the employee to achieve success in the second. It is important that individual school deadlines are met to ensure timely acceptance and entrance into graduate school. The mentor and supervisor play a pivotal role in this preparation by ensuring the employee has taken the necessary entrance exams, and that specific academic course work, if needed, is completed during the first year.

Moreover, the mentor and supervisor act as liaisons between the employee and Board members so that a mutually agreeable graduate-level school and engineering program is found. That said, candidate graduate schools should be of high academic standing, have top-ranked engineering programs and Masters degrees that can be completed within one year. When selecting graduate schools, there is an expectation to consider those that offer a nuclear engineering program, or ones that offer nuclear engineering/science related courses. Individuals are encouraged to take at least one or more nuclear engineering/science courses as part of their course study.

12. Graduate School Time Lines & Guidelines

June, July, August

- Set a date for taking the Graduate Record Exam (GRE), but schedule it no later than early September.
- Study for the GRE using software, Internet, prep courses, or books as necessary.
- Develop a list of potential top engineering programs and graduate schools using reference material such as US News & World Report and Gourmann Report.
- Commence researching 3 - 5 candidate graduate schools with top-ranked engineering programs and ones with Masters degrees that can be completed in one year.
- Conduct Internet searches of the University's web pages.
- Interview, and ask suggestions of, Board staff members who are graduates of your candidate schools. Also, interview Board staff members who have a degree in your intended major.
- Consult peers and professors in the academic community.
- Discuss potential school candidates with your mentor, supervisor, and the Vice Chairman before applying.

September, October

- Take the GRE by the end of September, if you have not already done so.
- Finalize the schools for which you are applying (Board will pay the fees for five applications).
- Meet with your mentor, supervisor, and Technical Director in late September or early October to discuss the selection of schools for which you are proposing to apply.
- Start collecting the materials required to submit your application;
 1. Applications from the schools (some on-line applications are available).
 2. Three recommendations from professors. There is often a delay in acquiring these recommendations from professors, so pursue them vigorously.
 3. Transcripts from previous schools.
 4. GRE scores.
 5. Statement of Purpose. Create a general version and then tailor it to each school. Ask a few Board staff members to assist in writing the Statement of Purpose so it relates to your work and also how the education will contribute to that work.

November, December

- As soon as possible, submit your applications. Mention in your applications that financial aid is not needed.
- Even if you have not been accepted yet, visit the school. Activities at these schools tend to be very busy in January and February.
- Take good notes on the programs including your courses, nuclear engineering courses, professors, and the one-year requirement. The Board will want to know details.
- Arrange to observe classes and tour the facility with professors and current graduate students.

January, February

- Begin school visits.
- Start planning a Board brief. Consult the Vice Chairman as appropriate.

March

- Complete School Visits
- Develop a briefing chart on your top schools and proposed program of study using suggested templates in Appendix G.

- Start finalizing your decision on the school you would like to attend, as acceptance letters should be forthcoming now.
- Gather any additional information the Board may request.

April

- Conduct the Board briefing using the chart.
- By mid-April, submit your acceptance letter to your school of choice.
- Smile! ☺

D. YEAR TWO

1. Graduate School

The Board encourages all staff to continue its formal education, and under the Professional Development Program, it is a requirement. The second year is spent in graduate school, and the employee is paid full tuition and full salary during this year.

2. Performance Objectives & Appraisals

The performance expectations of the employee during his or her second year are: (1) to successfully complete (as defined by the institution) the graduate-level program mutually agreed upon by the employee and the Board, including preparing any written products or making an oral presentation; and (2) to provide the mentor with frequent progress reports. (See Appendix E, *Sample of Performance Elements and Standards*.)

The supervisor is responsible for writing the employee's performance appraisal for this second year, with input from the mentor. The mentor, school advisor, and employee will work together if any problems arise where the employee does not complete the graduate-level program within the prescribed one-year time frame.

3. Promotion Upon Receipt of Masters

Employees who successfully complete the second year, as evidenced by being awarded a Masters degree, will automatically be promoted to the DN-II pay band. (Please refer to Administrative Directive 124.1, "Position Classification and Pay Administration for Scientific and Technical Personnel" for details on how promotions are calculated). The Human Resources office needs an official record of the employee's receipt of the Masters, whatever form that takes, and also a record of the employee's grades during the year.

4. Selection of Professional Practicum Assignment

Approximately six months into the second year, the employee and mentor must begin making decisions on third-year options, as there are several individuals involved in the coordination and approval of the professional practicum. Moreover, as a practical consideration, the Board prefers to relocate the employee from his or her graduate school location to the location of the third-year assignment. Specifically, the employee is responsible for taking the following actions:

1. During the early part of his or her second-year, provide the mentor with a written

memorandum of choice for third-year assignment. The memo will explain the work to be accomplished in the outside organization, the benefit to the Board, and the relevance to the employee's professional interest;

2. Visit the outside organization, at the Board's expense, to make a more informed final decision; and
3. Meet with the Technical Director and the Board Members to discuss the choice. No one person can control when the Board will issue its approval on the employee's choice, but the goal is to obtain their approval in March or April.

The employee's mentor will:

1. Review the choice of field assignments and make/recommend changes;
2. Meet with the Technical Director and Board Members to discuss the employee's choice; and
3. Represent the Board and employee in final negotiations with the representative from the outside organization.

Most often, a written Memorandum of Understanding (MOU) between the Board and the outside organization, or some other equivalent document is not required, but it depends upon the specific assignment. If an MOU is necessary, the Director, Human Resources will work with the mentor in preparing the document.

E. YEAR THREE

1. Professional Practicum

The mentor and employee work together to arrange a third-year assignment that will benefit both the employee and the Board, and one that is commensurate with the employee's education, experience and professional interests. The third year is meant to provide the employee with a meaningful technical assignment. Possibilities include working at one of the DOE sites with a Board Site Representative, with a private company, national laboratory or other government agency.

2. Performance Objectives & Appraisals

Prior to the third year assignment, the mentor and employee must establish a clear understanding of the work he or she will be assigned by the outside organization. The mentor will monitor the employee's progress, and will obtain a written performance evaluation by the employee's professional practicum supervisor. (See Appendix E, *Sample of Performance Elements and Standards*.)

3. Promotion After Year Three

Promotions after the third year are not automatic. They are based primarily on performance compared with grade-level peers on the technical staff, i.e. how capable the individual is of taking on more difficult assignments as a full technical staff member. Promotions are recommended by the individual's supervisor.

F. YEAR FOUR

Year 4 & Beyond - At the completion of third-year assignment, the employee is expected to become a full, contributing member of the DNFSB technical staff.

G. THE SUMMER SCHOLAR PROGRAM AT THE DNFSB

1. The Summer Scholar Program

The Board has implemented an internship program for high-caliber juniors and seniors, which functions as a feeder pool for its Professional Development Program. Students receive competitive salaries, a technical mentor, structured technical assignments, vacation and sick leave benefits, as well as other federal benefits. This program is designed for students to work year-round in fitting with their academic program, but typically, students come during the summer months.

2. Objectives of the Program

Selected students spend approximately three months working with the Board's technical staff (typically during the summer) to become acquainted with public service generally, and the Board's environment specifically. The time will be spent in various ways, such as:

- Participating in two or three large projects which involve:
 - research
 - discussions with technical staff
 - visits to defense nuclear facilities, and
 - writing technical documents regarding their findings
- Participating in several smaller projects which involve:
 - summarizing findings of relevant study, or
 - providing relevant numerical analysis
- Learning about the Board's mission, organization structure, policies, operations, and about its relationship with DOE.
- Understanding the relationship of system concepts, technical design, conduct of operations, and personnel training to nuclear facility or plant safety.
- Learning about defense nuclear facilities under the DOE. This includes learning about its headquarters organization, its field offices, chemical processing and separation facilities, waste disposal facilities, national laboratories, nuclear waste land management, and environmental restoration facilities.
- Acquiring a knowledge-base about regulations, rules, policies and orders, technical standards, and nuclear engineering fundamentals as they relate to the operation of defense nuclear facilities.
- Understanding the workings of the Professional Development Program by interacting closely with the staff in various stages of the program both in and out of the office; taking part in seminars with professional development staff; taking tours of nearby nuclear facilities; and attending a conference relevant to the work.

3. Role of the Mentor

The mentor is not a supervisor, but assumes the role of sponsor, teacher, counselor, and will provide assistance and guidance in navigating the student through the program.

Care is taken to match an appropriate mentor to each intern. Mentors are selected on the basis of their willingness to act in that role, their commitment to the intern's development, their broad experience, their ability to devote sufficient time to the relationship to ensure adequate opportunities for counseling and discussion, and an ability to assess development needs. Mentors are encouraged to demonstrate openness, candor, and a willingness to share concerns and give constructive feedback. Interns are encouraged to meet with their mentors regularly, in both formal and informal settings. Mentors are responsible for providing a means for success of the intern, regardless of whether or not they have the same educational background.

The mentor will call or e-mail the student about two weeks prior to his or her arrival at the Board. Topics to be discussed should include the student's interests and expertise, and how these relate to the Board's function. The mentor will make an effort to provide the intern with a project that is appropriate to the student's stay, one

that involves a site visit, and ends with some type of formal documentation. The site visit should be pre-approved by the Deputy Technical Director within a month of the intern's arrival.

The mentor should encourage staff to interact with the intern regarding his or her interests, possibly creating smaller projects for the intern to perform or organizing tours of nearby facilities of relevance to the Board.

4. Interview Process

or

Students who are being considered for an internship with the Board will be called

e-mailed by the Human Resources office with an invitation to interview at the Board's headquarters in Washington, DC. Travel arrangements are made through the Board's travel office. In connection with the interview, the Board will reimburse students for travel expenses, with the exception of airfare which is paid in advance by the Board. The student will be brought to DC the day before the interview and will be reimbursed for one night's stay.

Upon arrival to Washington, DC, the Board will send a representative to the airport to meet the student, and ensure that he or she arrives safely to the hotel. If possible, an informal dinner will be arranged with other potential hires and the Board's representative(s). This is an opportunity to interact with the staff and ask any questions about the interview process. Please relax during dinner, as staff members are not using it to interview students, and they will not be deciding whether to extend an offer.

The interview itself is approximately four hours – two hours for the formal interviews, and about two hours for the informal ones. The formal interviews are with each Board Member and typically the Chairman. These individuals are all presidential appointees. The informal interviews are conducted with various

technical staff members.

Prior to your interview, it would be helpful to visit the Board's web site: www.dnfsb.gov, and review the Board Members' biographies. In addition, you may want to review Chapter 1, of the latest Report to Congress to get a better idea of what the Board does, and it is imperative that you familiarize yourself with the Board's enabling legislation, as the Chairman will ask specific questions about it.

Although Human Resources will have provided the interviewees with your resume and transcript, you may want to bring another copy to the interview if either one has been updated. Other items to bring to the interview are a pad and pen for taking notes.

After the interview, Human Resources will call or e-mail you regarding your hiring status. This is typically done within a week of your interview.

H. SUMMER SCHEDULE HIGHLIGHTS

1. Your First Day

- Report for duty (9 am)
- Human Resources Orientation
- One-on-one meetings with individual Board Members
- Introduction to Technical Director and Deputy Technical Director
 - Discuss the Board and the general organization of the Board's staff
 - Introduction to Technical Staff (including Tech Staff Biography Book)
 - Overview of the meeting schedules for the Engineering Group, Weapons Group, Material Processing and Environmental Group (MPER), and Technical Staff
 - Discuss work schedule
 - Meet Group Leaders
- Introduction to Mentor
 - Learn about Mentor's projects and background
 - Outline goals and expectations for summer
 - Discuss your first project for the summer
- Obtain recommended reading material
- Begin interactions with staff (attend Technical Staff meetings, etc.)

2. Your First Week

- Continue general introduction to working at the Board
- Continue to meet staff members and discuss their respective interests and projects
- Begin background research for project(s)

3. The Following Weeks. . .

- Attend staff meetings and interact with staff members
- Continue work on main projects
- Contribute to any other projects you may have heard about in your first week, as needed
- Prepare for site visits related to your projects (including research,

- calculations, planning sessions, etc.)
- Attend any Professional Development lectures and seminars that may be offered
- Tour nearby sites and research centers that relate to the Board's mission

4. Your Final Month

- Visit sites related to your projects (if you have not already done so)
- Prepare any information or issue any reports that result from your background research and site visit
- Present your results to the Board

I. ADMINISTRATIVE ASPECTS OF THE PROGRAM

1. Qualifications for Employment Consideration

- An awarded college or university degree in engineering;
- A GPA of 3.5 or better;
- U.S. Citizenship;
- The ability to pass a drug test;
- The ability to obtain and maintain a top-level security clearance;
- A creative mind;
- Interpersonal skills; and
- Ability to work as part of a team

2. Recruitment & Selection Process

Recruitment

The Board recruits individuals for its Professional Development Program primarily through on-campus interviews with students at colleges and universities that are likely to be sources of quality technical candidates. These on-campus interviews are arranged through the Human Resources (HR) office and are traditionally conducted by a technical recruiter in the Fall, with the individual entering-on-duty between May and August of the following year. No offers are made during the on-campus interviews. The recruiter's role is to provide a preliminary screening of potential technical candidates.

Other means of recruitment for the Professional Development Program are accomplished electronically by placing vacancy announcements on the Board's home page, on the web pages of professional technical organizations, on commercial bulletin boards such as monster.com and on government listings provided by the Office of Personnel Management (OPM).

Recruitment efforts are also made through job fairs, advertisements in engineering and professional journals, newspapers, college handbooks, and other publications. Interested candidates may reach the HR Director via e-mail: susand@dnfsb.gov or by calling 1-800-788-4016. For additional information about the Board, please visit our location on the world wide web: dnfsb.gov.

Selection Process

For those candidates recruited on-campus, the final interview selection process begins about mid-December. At this time, the HR office provides the Board Members a resume book of all high-quality candidates screened by the technical recruiters. The Board Members review the resumes and make the final decision on whether a candidate is interviewed, and if interviewed, whether he or she is extended an offer of employment.

For those Professional Development Program candidates recruited through some other means such as a job fair, vacancy announcement, or advertisement in a technical publication, the selection process is essentially the same. A rating panel conducts a preliminary screen for high-quality candidates, and the HR office then provides a book of resumes to the Board Members for their review. Again, the Board makes the final decision as to who will be interviewed, and if interviewed, whether he or she is extended an offer of employment.

3. Job Offers

Candidates offered a position into the Board's Professional Development Program will receive a written offer package from the Human Resources office. This package includes salary and benefit information, and paperwork associated with obtaining a security clearance. Only written offers that are sent from the HR office are considered official.

4. Relocation: Agreements & Impact of Resignation on Reimbursements

Upon entering-on-duty, a new employee must sign an "Agreement to Remain in Government Service," for twelve months, (see Appendix H) when they are moved to the Washington Metropolitan area under a *Permanent Change of Station (PCS)*. If the employee resigns prior to twelve months, all relocation expenses must be reimbursed.

During the second and third years, the employee is relocated under a *Temporary Change of Station (TCS)* for a specific period of time. This time frame may be as short as six months and may be extended to thirty, but initially, it cannot exceed nine months. No agreement is signed to remain in government service during the second and third year. If an employee resigns prior to the specified time period, a cost comparison is done to determine if money is owed the government. The comparison is between actual costs of relocation and what it would have cost if the employee was on a long-term Temporary Duty Assignment (TDY). For example, an employee was given a nine month assignment, but resigns in six months. The relocation cost was \$10,000 for a nine month assignment. It would have cost the government \$9,000 had the employee been on a six month TDY assignment. Therefore, the employee has a reimbursement to the government of \$1,000.

5. Service Commitment

(Please note that references to the Board either in the Service Commitment or Relocation Agreement Sections are synonymous with the federal government).

Individuals who are accepted into the Professional Development Program have a specific service commitment to the Board. In exchange for the employee receiving a full salary and full tuition for the second year of academic training, the Board requires a written 3-year service commitment from the employee (see Appendix I). This "3 for 1" rule is based on federal regulations that state generally that an employee must agree to serve at least three times the length of the training period in a non-government facility. Credit towards the service commitment begins with Year 4. Upon completion of the employee's field assignment, he or she is brought back to Washington, D.C., and this reassignment is officially

documented using a Standard Form 50 (SF-50), "Notification of Personnel Action." The effective date on the SF-50 is the date used to determine service credit.

6. Failure to Fulfill Service Commitment

An employee who fails to fulfill the service commitment will be indebted to the Board for the following:

During the first year: An employee who resigns from the Board during the first year may be required to reimburse the Board for any training obligations. This is true only if the employee has not met the "3 for 1" rule as described above in G.5., *Service Commitment*. The employee does not repay salary, cash bonuses, or other pay received.

During the second or third year: If an employee resigns from the Board during the second year, training obligations would require reimbursement. The employee does not repay his/her salary, cash bonuses, or other pay. If an employee resigns from the Board during the third year, training obligations would require reimbursement. The employee does not repay his/her salary, cash bonuses, or other pay received.

During years four, five or six: If an employee resigns from the Board during years four, five or six, and before the service commitment has been fulfilled, training obligations would require reimbursement. However, work performed during these years are credited towards the 3-year service commitment.

A very simple formula is used to determine the amount of reimbursement. For example, if an employee were to complete 5 months of service, the 31 months remaining (one month is equal to 22 workdays), would be multiplied by the amount the Board has expended on training.

EXAMPLE:

$$\frac{31 \text{ mos.}}{36 \text{ mos.}} = \frac{X}{\$30,000}$$

$$X = \$25,833$$

7. Beginning of Service Debt Payback

With regard to the service commitment, the employee begins to "repay" the service debt with the start of Year 4. In total, new employees must commit at least six years to the program. Please see the chart below.

Applicant Enters the Program	Receives Credit Toward the 3-year Service Commitment	Total Service with the Board
First Year spent at DNFSB Headquarters - Washington, D.C.	No	1
Second Year spent in graduate school - locations will vary	No	2

Applicant Enters the Program	Receives Credit Toward the 3-year Service Commitment	Total Service with the Board
Third Year spent on field assignment - locations will vary	NO	3
Service Commitment	3 years after field assignment	5

8. Resignation During years 4, 5 or 6

Employees who resign during years 4, 5 or 6, and before their service commitment is fulfilled reimburse the Board using the formula on the preceding page. One month is equal to 22 workdays, and no credit is given for days in non-pay status.

9. How Months Are Computed

One month is equal to 22 workdays. No credit is given for days in non-pay status.

10. Waivers

The Chairman, or designee, may waive in whole or in part the right of the Board to recover training expenses incurred by the Government if it is shown that the recovery would be against equity and good conscience or against the public interest.

11. Conditions Under Which Training Is Not Reimbursed

Under the following circumstances an employee is not required to repay a service or training commitment:

- (1) An employee who transfers to another federal agency and whose training will be useful to that agency will have his or her debt transferred. This decision, however, is ultimately made by the Chairman after conferring with a representative from the gaining agency. If the Chairman decides that the employee's training is not transferrable, he or she is required to reimburse the Board for the designated expenses.
- (2) A Congressional mandate that dissolves the Board; or
- (3) A Congressional mandate that requires a transfer of Board functions, activities, and employees to another government agency.

The Chairman retains the right to waive any cost associated with the training and travel expenses incurred by the employee during the 3-year program.

If Employee Leaves During:	Reimbursement for Failure to Complete Service Commitment
FIRST YEAR	Only for training where the employee has not met the 3 : 1 rule.

If Employee Leaves During:	Reimbursement for Failure to Complete Service Commitment
SECOND YEAR	Yes. Employee must reimburse Board for any costs incurred.
THIRD YEAR	Yes. Employee must reimburse Board for any costs incurred.
After third year but before service commitment is completed.	Yes. Employee must reimburse Board for any costs incurred.
Completion of Service Commitment	No

12. Reimbursement for Graduate School

Typically, employees selected for the Board's program enter-on-duty no later than August 30. Nearly as soon as the employee arrives, both the mentor and the employee must begin to consider where to attend graduate school. This decision is mutually agreed upon by the employee and the Board, usually in the Spring of the employee's first year. Prior to this final decision, the employee must have taken the Graduate Record Examination (GRE) and depending on the school, one or more advance GRE tests. It is the responsibility of the employee to arrange for taking these tests, and applying for admission to the school. The Board will pay for 2 preparatory courses to prepare an employee for tests needed to be considered for admission, but the Board does not, and cannot, guarantee admission to graduate school.

The employee can expect to be reimbursed by the Board for the following:

- ✓ A maximum of 5 applications, and a maximum of 5 transcripts. Associated fees such as mailing expenses, and faxes may be reimbursed by the Board.
- ✓ A non-refundable application fee of whatever the school is charging. This usually is about \$50, but the employee will be reimbursed for this application expense.
- ✓ Travel expenses to visit up to 3 schools. The employee will be reimbursed for one-day visit plus the travel to and from the school.

13. What the Board DOES NOT Pay With Respect to Graduate Admission Process

The employee *will not* be reimbursed for the following:

- ✗ Physicals that may be required by the school. Employees are eligible to participate in the Federal Health Benefits program, and will need to seek reimbursement through their individual plan.
- ✗ Health Insurance through the school. Again, since the employee is eligible for coverage under the Federal Health Benefits program, no health insurance coverage through the school is reimbursed.
- ✗ Fees associated with non-technical courses that exceed what the Board has paid for in tuition are not reimbursable. These costs must be borne by the individual.

- X** School supplies which include, but are not limited to: notebooks, looseleaf paper, pens, pencils, tape, staples, etc. These are items that the individual is responsible for securing.

14. Information Technology Services, Personal Computers

During the second year, individuals enrolled in the Professional Development Program will receive a computer system that will be sent to a location designated by the employee. This computer system is for the convenience of the employee to help with word processing, spreadsheets, charts and other routine assignments that can be performed at their living quarters rather than the University's computer labs. It is not the intent of the computer system to have all capabilities in performing all assignments and requirements of the educational program.

The employee enrolled in the Professional Development Program will work with the Network Administrator in selecting the appropriate system for the University he/she is attending. This system must be compatible with the DNFSB local area network in order to operate with the network once the equipment is returned to Headquarters. The selected system can not exceed \$2,500.

Employees should work with the Network Administrator to secure the computer system needed. This process may take about two months.

15. Shipping

The Board's contracted moving company will ship the computer system with the employee's personal items. The Board will not make special shipping arrangements for the employee's computer. It is the responsibility of the employee to make all arrangements for the final destination of the computer system. If the employee selected the contracted moving company to ship the equipment, the employee must have the equipment ready at the designated time the moving company arrives at Headquarters for pick-up. A property pass must be filled-out, signed and returned to the Administrative staff before departure.

16. Software

Software needed or required by various classes is to be purchased at the University's bookstore in order to satisfy licensing obligations. These charges are reimbursed through the normal book purchasing process where the employee purchases a book (in this case computer items), submits the receipt and is reimbursed by the Board. Installation of any school related application is the responsibility of the employee. The employee is responsible for the integration and maintenance of the hardware and software.

17. Unique Requirements

Under unique circumstances, the Board may arrange to have the employee purchase computer equipment that is not compatible with the DNFSB's system, if it is required by the University. A written justification must be submitted by the employee to his/her mentor, who will consult and coordinate any such purchases with the Board's Information Technology Services personnel. The General Manager must approve the request for budgetary concerns, and in some cases, the Chairman may need to approve the request.

18. Returning Equipment

Computer systems and/or all applications purchased by the Board are to be returned at the end of the third year. When returning the computer system it is the employee's responsibility to make arrangements for shipping. The employee's computer system and software applications can be returned using the Board's moving contractor, or Federal Express contract. The employee must pack the computer system and software in their original boxes to guarantee shipment of equipment. All items must be delivered or arranged for pick-up at a designated address given by the employee to be sent to the DNFSB Headquarters.

19. Available Resources

- DNFSB Travel Policies & Procedures (See Administrative Directive 10-1a)
- Office of Personnel Management (OPM) web site: *OPM.gov*
- Position Classification & Pay Administration for Scientific & Technical Personnel (AD 124.1)
- Health Benefits (<http://www.OPM.GOV/insure/index.htm>)
- Life Insurance (<http://www.OPM.GOV/insure/life/index.htm>)
- Thrift Savings Plan (<http://www.tsp.gov>)
- Training Directive (See Administrative Directive 171.1)
- Employee Assistance Program (See Administrative Directive 151.2)

Appendix A

Professional Development Program Sample of First Year Assignments

- ♦ Reviewing a failure analysis (fracture mechanics) of a nuclear weapon component

- ◆ Reviewing and evaluating fatigue analysis of the Replacement Tritium Facility (RTF) thermal cycling absorption process for separation of tritium and deuterium
- ◆ Conducting an assessment of the Hanford Tank Farm level instrumentation including modes of operation, expected accuracies, and sources of error
- ◆ Reviewing standards for spent fuel storage including NRC regulatory guides
- ◆ Reviewing re-certification of Savannah River K-Reactor fuel design
- ◆ Reviewing safety for the accelerator production of tritium, and contributing input for preparation of a final report of the accelerator production of tritium

Appendix B

Professional Development Program Plan Orientation Schedule for the First Four Weeks

First Day: Report for Duty

- A.M. Human Resources Orientation, Introduction to OGM/OGC Staff

- Deputy Technical Director or another member of the senior staff provides a general overview and explains Tech Staff Meeting
- P.M. Attend Tech Staff Meeting (give personal introduction)
- Initial phone/voice/e-mail orientation

Week #1:

- Human Resources arranges one-on-one meetings with individual Board Members
- Meet with Deputy Technical Director:
 - Discussion of the Board and the general organization of the Board's entire staff
 - Biography Book Introduction to the Tech Staff - flag potential Mentors and others to seek out, explain the Tech Staff's general obligation to the new employees
 - Provide general overview of the expectations for the first few weeks and months (meetings, Reading List, Recommendations/Tech Reports, Seminars, training
 - The process/expectations for picking and working with a Mentor (not a supervisor)
 - How to get questions answered (from whom - Ron, Kent, Sue, etc.) until the Mentor is selected
 - Hand-out performance elements for review (do not discuss until later)
 - Discuss Alternate Work Schedule policy
 - Introduce to Group Leaders (walk around) and discuss attendance at other weekly Group Meetings for the first few weeks
- Start Interactions with Tech Staff, including potential Mentors
- Start Reading List
- End of Week: Lunch or Happy Hour

Week #2:

- Monday: Attend Nuclear Weapons Group Weekly Meeting
- Monday: Attend Engineering Group Meeting
- Continue OGM Orientation items, if needed
- Continue interactions with Tech Staff, including potential Mentors
- Continue Reading List
- By Thursday: Develop recommendations to Group Leader for Mentor (first 3 choices)
- Friday: First meeting with Technical Director and Deputy Technical Director to discuss potential mentors

Appendix B

Week #3:

- Tuesday: Attend Material Processing and Environmental Restoration Group Weekly Meeting
- Continue interactions with Tech Staff, and discuss possible projects to work on

- Continue Reading List
- First Meeting with Mentor
 - Discuss Intern and Mentor's background/experience
 - Elicit and answer any work environment questions, so far
 - Discuss the Intern's interests related to work, education, etc.
 - Talk about options for graduate school, other training (nuclear, work skills, etc.)
 - Discuss performance elements
 - Outline the intent of the Interns Individual Development Plan
- Second Meeting with Mentor
 - Work on Individual Development Plan
- By Friday: Meet with Deputy Technical Director and sign performance elements

Week #4:

- Monday: Attend engineering Group Meeting
- Finish interactions with all the Tech Staff
- Continue Reading List
- Start work on Recommendations/Tech Report
- Present (with Mentor) Individual Development Plan in meeting with Deputy Technical Director

Appendix C

**Professional Development Program
Technical Reading List**

Required Reading During the First Year:

- A. Authorizing Legislation: Public Law 100-456 (National Defense Authorization Act, Fiscal Year 1989, as amended)
- B. Biographies of current Board Members
- C. Staff Biographies
- D. Latest Board Annual Report
- E. Board Strategic Plan, Current Year Budget Request/Performance Plan, and most recent Performance Report (if available)
- F. Board Policy Statements

Technical Reading:

- A. “The Nuclear Weapons Complex--Management for Health, Safety, and the Environment,” National Research Council, 1989
- B. “The Safety of Nuclear Installations” by Herbert J. Kouts
- C. “Closing the Circle on the Splitting of the Atom: The Environmental Legacy of Nuclear Weapons Production in the United States and What the Department of Energy is Doing About It,” DOE/EM-0266, January 1996
- D. “Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes to Their Environmental Consequences,” DOE/EM-0319, January 1997
- E. Los Alamos Science: “Radiation Protection and the Human Radiation Experiments,” Number 23, 1995
- F. “The Hazards of Selected Actinides” by Davis Hurt
- G. Summary Volume: “Plutonium Working Group Report on Environmental Safety and Health Vulnerabilities Associated with the Department’s Plutonium Storage,” DOE/HE-0415, November 1994
- H. “Uranium Working Group Report” by Wayne Andrews
- I. “The Making of the Atomic Bomb” by Richard Rhodes

Appendix D

Professional Development Program

Sample of First Year Individual Development Plan (IDP)

I. Learning Objectives

The learning objectives are identified in the DNFSB performance appraisal plan for the first year engineering intern (attached). The activities identified below are designed to address the critical elements (CE) and standards of this DNFSB performance appraisal plan.

II. Activities

The first year activities identified below represent an initial plan and are subject to continued revision and refinement throughout the first year.

1. Acquire working knowledge of some of the standard that are in use in the Defense Nuclear Facility Complex [Critical Element 1].
 - a. American Institute of Steel Construction
 - b. American Concrete Institute
 - c. American Society of Mechanical Engineers Piping Standards
 - d. American Welding Society Standards
2. Acquire a working knowledge of the DNFSB and DOE Organizations including their mission, structure, policies, operations, and recommendation / implementations through reading and discussions with the mentor and other staff. [Critical Element 2].
 - a. Administration - S. Dickerson
Compensation/Benefits
Training Policy
Performance Appraisal
 - b. History - Technical Staff Member
Enabling Legislation
Board Recommendations
Annual / Technical Reports
Board Biography
 - c. Security - M. Leggett
 - d. Resources - A. Thibadeau
IRIS
Library
DNFSB Homepage
Outside experts
 - e. DNFSB Staff - Technical Staff Member
Biographies
Current Activities
Expertise / Interests
 - f. Staff Interactions - To be determined

Appendix D

Staff Meetings
Team Meetings
Board Meetings

g. Outside interactions - To be determined
DOE / Contractor Meetings

3. Perform Field and Technical Assignments as opportunities avail and as prescribed by mentor and technical supervisor [Critical Element 1, Critical Element 3 & Critical Element 4].

a. Hanford - Tech Staff

Spent Nuclear Fuel Project-Integrated Water Treatment System and Primary Cleaning Machine-Participate in meetings and provide input to reports concerning deficiencies in piping welds and the split shaft bearing wear resolution

b. Oak Ridge - Tech Staff

Highly Enriched Uranium Material Facility-Support an in depth structural design review for the proposed facility and generate the required reports and participate in Board briefs.

c. Special Studies - Tech Staff

Downbursts - Investigate the phenomena of Downbursts in relationship to structural engineering and provide an informative report on the findings

4. Complete Technical and Professional Training [Critical Element 5].

- a. Complete nuclear engineering graduate classes at a local University
- b. Attend Intern and Staff Training Seminars
- c. Attend HAZMAT (Hazardous Material) Training
- d. Complete Graduate Record Examination
- e. Attend an ASCE conference
- f. Select a graduate school and course of study that are endorsed by the Board

III. Evaluation

The evaluation of performance in accomplishing the activities identified in Section II will be conducted annually through the DNFSB Performance Appraisal System

IV. Approval

- a. New Employee: _____ Date: _____
- b. Mentor: _____ Date: _____
- c. Deputy Technical Director: _____ Date: _____

Sample of Performance Elements & Standards

Year One

Critical Element 1

Under the guidance of a technical mentor, performs a variety of assignments directly related to the DNFSB's mission. Assignments contain elements pertaining to the design, construction, operation and/or decommissioning of DOE's defense nuclear facilities, and will generally be in the following areas:

Fully Successful Standard

Work products are accurate, completed within established time frames and reflect a basic understanding of assigned area(s).

Critical Element 2

Acquires a working knowledge of the DNFSB which includes its mission, organizational structure, policies, operations and recommendations. Becomes familiar with the Department of Energy (DOE) defense nuclear facilities, to include DOE Headquarters organization as well as its field and area offices. Also becomes familiar with DOE's defense nuclear production, utilization and waste storage facilities.

Fully Successful Standard

Work products and inputs reflect a basic knowledge of the functions, responsibilities and interactions of DOE's defense nuclear complex facilities and operations.

The Professional Development Plan is completed within the established time frame.

Critical Element 3

Reviews reports and drafts correspondence related to the implementation of Board recommendations. Conducts special studies or analyses under the guidance of the mentor or a senior technical staff member.

Fully Successful Standard

Written materials reflect an understanding of the Board's oversight responsibilities, are technically sound and are written in a clear, well-organized manner. Any required follow-up action is promptly researched and completed within time frames established by the mentor or senior staff member.

Critical Element 4

Participates in overall team efforts, including an assigned team project composed of either entry-level employees or senior technical staff. Team projects may require visits to one or several defense nuclear facilities.

Fully Successful Standard

Written materials reflect an understanding of the Board's oversight responsibilities, are technically sound and are written in a clear, well-organized manner. Any required follow-up action is promptly researched and completed within time frames established by the mentor or senior staff member.

Critical Element 5

Selects a graduate school and course of study that are mutually agreed upon by the Board and new employee.

Fully Successful Standard

Selection of a graduate school and engineering major reflects a balance between Board and individual's needs and demonstrates a commitment to obtain the highest caliber education possible.

Application, acceptance, and course and thesis selection are made within established time frames. Course selection meets the Board's requirement for completion of courses in the area of nuclear engineering.

Sample of Performance Elements & Standards

Year Two

Critical Element 1

Under the guidance of a technical mentor, completes graduate courses and other assigned requirements to permit successful completion of a master's degree in engineering and advancement to the third year of the Professional Development Program.

Course grades are submitted to the DNFSB Division of Human Resources.

Fully Successful Standard

Scholastic achievements demonstrate a commitment to excellence.

Grades are timely submitted to the Division of Human Resources.

Critical Element 2

Actions demonstrate an understanding of the terms and conditions of the Continued Service Agreement.

Fully Successful Standard

The terms and conditions in the Continued Service Agreement have been adhered to.

Critical Element 3

Under the supervisor, and with input from the Office of the Technical Director and the Board, develops a recommended third year assignment that demonstrates a clear professional objective that is sensitive to the mission of the agency.

Fully Successful Standard

The recommended third year assignment is effectively coordinated with the Office of the Technical Director using the assigned mentor, and is subsequently approved.

Sample of Performance Elements & Standards

Year Three

Critical Element 1

Within the third year assignment, the employee maximizes the opportunity to acquire new technical skills, while strengthening and broadening previously developed technical skills.

Fully Successful Standard

Performs consistently well in a meaningful project or series of projects of a technical nature.

Demonstrates adequate knowledge and understanding of the technical fundamentals of such projects.

Applies techniques and methodologies gained in the graduate school assignment to technical problem solving.

Critical Element 2

Pursues a technical specialty that focuses on an area of expertise that can be continued upon return to Headquarters.

Fully Successful Standard

Makes consistent efforts to advance technical skills and obtain a specialty through continuing education, participation in professional societies, committees, working groups, or focused study with experts.

Interacts with and learns from knowledgeable and seasoned technical personnel in a specialty area who provide guidance and insight, technically and professionally.

Critical Element 3

Within the third year assignment, the employee participates on teams and within organizations in a proactive manner, developing and enhancing clarity in communications, both orally and in writing. When possible, presentations akin to Board and staff briefings are given.

Fully Successful Standard

Finds opportunities to work with a team and, when possible, exercises leadership within a team. Supports the team in a reliable, cooperative and professional manner. Provides clear input to the team and conforms to the mutually agreed schedule for products.

Documents and briefings are technically accurate, thoroughly researched and presented in a clear and concise manner. Written communications are grammatically correct and based on sound practices of English usage. Oral communications are constructive and professionally conducted.

Critical Element 4

Pursues the relationship between the third year assignment and the Board's activities. Distinguishes and ascertains the parallels between the work observed and accomplished in the third year assignment and that completed throughout the DOE complex.

Fully Successful Standard

Can clearly articulate the relevance of the skills and knowledge obtained in the third year assignment to the activities of the Board's staff.

Seeks assignments in areas relevant to the Board's oversight, allowing for an area of expertise to develop and be utilized upon return to Headquarter

Appendix F

Sample Seminar Schedule

Seminar Topic	Lead Presenter	Date\Time
The Risks of Ionizing Radiation	Dan Burnfield, Jim Troan	Oct. 3, 8:15 -12:00
Plutonium Metallurgy	Bill Yeniscavich, Al Jordan	Oct. 4, 8:30 - 11:00
Uranium	Herb Massie	Oct. 4, 1:30 - 3:00
Tritium	Tom Burns, Jay DeLoach	Oct. 5, 1:30 - 2:30
Hazardous Substance in the Weapons Complex/Chemical Process Safety	Rich Tontodonato, Bill Von Holle	Oct. 6, 8:30 - 10:00
Introduction to the Environmental Management Sites and DOE EM Organizations	Rich Tontodonato, Dan Ogg, Steve Stokes, Tim Hunt	Oct. 18, 1:30 - 3:00
Fissile Material Disposition	Mike Merritt	Oct. 19, 8:30 -10:00
Introduction to the Nuclear Weapons Sites and NNSA Organizations	Jim McConnell, Wayne Andrews, Jack Deplitch, Al Jordan, Tim Dwyer	Nov. 1, 1:30 - 3:30
Stockpile Management, Nuclear Explosive Safety	Jim McConnell, Wayne Andrews, Chip Martin,	Nov. 2, 1:30 - 3:00
Standards-Based Integrated Safety Management, Feedback & Improvement	Matt Moury	Dec. 5, 1:30 - 3:30
Activity-Based Work Planning	Dan Burnfield, Wayne Andrews	Dec. 6, 8:30 - 10:00
Facility Safety Analysis Documentation	Farid Bamdad	Dec. 6, 1:30 - 3:00
Design and Construction of Nuclear Facilities	Joel Blackman	Dec. 7, 1:30 - 3:00
Technical Competence & Training	Jay DeLoach	Jan. 4, 1:30 - 3:00
Maintenance & Configuration Management	Matt Moury, Herb Massie	Jan. 5, 1:30 - 3:00
Conduct of Operations	Dan Ogg	Jan. 6, 1:30 - 3:00
Criticality Safety	Joe Roarty	Jan. 7, 1:30 - 3:00
Emergency Preparedness and Response	Jack Deplitch	Feb. 1, 1:30 - 3:00
Systems Engineering	Roger Zavadoski, Dan Burnfield	Feb. 2, 1:30 - 3:00
Fire Protection	Bill Shields	Feb. 3, 1:30 - 3:00

Electrical Systems at the Defense Nuclear Facilities	Ajit Gwal	Feb. 4, 2000 3:30 - 3:00

Seminar Topic

Lead Presenter

Date/Time

University of Illinois - B.S. Structural Engineering

Post-Degree Graduate Courses

Introduction to Structural Dynamics (University of Illinois)
Behavior and Design of Metal Structures, II (University of Illinois)

Continuing Education with the Board

Radiation Sciences (University of Maryland, Fall '99)
Probabilistic Risk Assessment (University of Maryland, Spring '00)
ASCE Wind Loads Course (July '99)
EERI Technical Briefing on the Turkey Earthquake (Sept. '99)
NEHRP Seismic Rehabilitation Seminar (Feb. '00)

Master's Degree in Structural Engineering Emphasizing in Dynamic Analysis & Earthquake Engineering

The University of Texas at Austin

*Masters of Science
(12-16 month program)*

=====Fall=====

- Computer Methods in Structural Analysis
- Earthquake Engineering
- Stability of Structures
- Advanced Technical Communication

=====Spring=====

- The Finite Element Method
- Structures Seminar
- Advanced Structural Analysis
- Decision, Risk, and Reliability
- Radioactive Waste Management

=====Additional Requirements=====

- "Department Report"

University of California - Berkeley

*Masters of Science
(9-12 month program)*

=====Fall=====

- Advanced Mechanics of Materials
- Computer-Aided Engineering
- Geotechnical Earthquake Engineering
- Engineering Risk Analysis

=====Spring=====

(4 of the following)

- Finite Element Methods
- Earthquake-Resistant Design
- Advanced Earthquake Analysis
- Structural Reliability
- Radioactive Waste Management

=====Additional Requirements=====

- Comprehensive Examination
- Opportunities for Research During Summer Session

MIT

*Masters of Engineering
(9 month program)*

=====Fall=====

- Concepts of Engineering Practice
- Motion Based Design
- Advanced Structural Dynamics
- Nuclear Waste Management

=====Spring=====

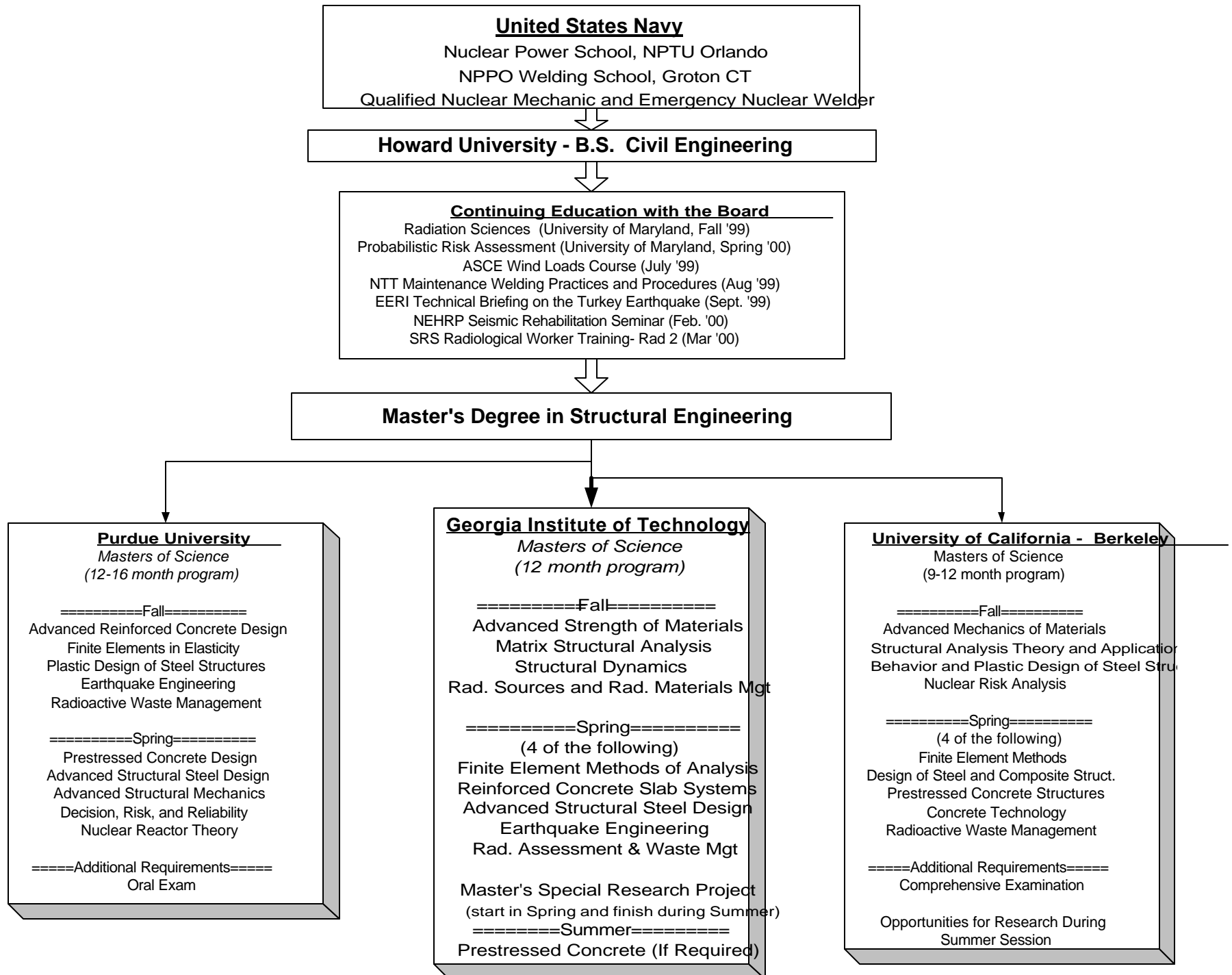
- NDE of Materials and Structures
- Information Processing for Eng. Systems
- Structural Analysis and Control

=====Additional Requirements=====

- "High-Performance Structures" Project
- Individual Thesis

Appendix G
Graduate School
Template

A



**SERVICE AND REIMBURSEMENT AGREEMENT ♦ MOVING EXPENSE ALLOWANCES
(WITHIN THE CONTERMINOUS UNITED STATES)**

**THIS DOCUMENT SHALL BE EXECUTED IN QUADRUPLICATE TO ESTABLISH ELIGIBILITY FOR
PAYMENT OF TRAVEL, TRANSPORTATION, AND OTHER MOVING EXPENSES AUTHORIZED
BY 5 U.S.C. 5723, 5724, and 5724a.**

1. GAINING SERVICE OR STAFF OFFICE	2. TITLE AND GRADE OF POSITION
3. REPORTING DATE	4. NEW OFFICIAL STATION

I, _____, hereby agree to remain in the service of the Government for 12 months following the date I report for duty at my new official station as shown in items 3 and 4 above, unless separated for reasons which are beyond my control and are acceptable to the department concerned. In case of violation of such agreement, any moneys expended by the United States on account of travel, transportation, and related moving expenses for myself and immediate family authorized by sections 5723, 5724, and 5724a of the United States Code in connection with my transfer or appointment shall be considered as a debt due the United States.

5. SIGNATURE OF EMPLOYEE

6. DATE

Appendix I

**Professional Development Program
Continued Service Agreement**

1. I, _____ agree to serve as an employee of the Defense Nuclear Facilities Safety Board (Board) for a period of three years, or three times the length of the training, from the date that I complete the Government sponsored graduate level course work. I acknowledge that I am currently receiving a salary from the Board, and simultaneously receiving this Government sponsored training.
2. If I voluntarily leave employment with the Board before completing the period of service agreed to in item 1., I agree to reimburse the Board for the tuition and related fees paid in connection with this training. Such reimbursement will be prorated based on time remaining under this service agreement.
3. I further agree, that if I voluntarily enter service of another Federal agency or other branch of the Government before completing the period of service agreed to in item 1., I will give the Board written notice of at least 10 workdays, during which time a determination concerning reimbursement will be made.
4. I understand that any amounts which may be due the Board as a result of any failure on my part to meet the terms of this agreement may be withheld from any monies owed me by the Government, or may be recovered by such other methods as are approved by law.
5. I acknowledge that this agreement does not in any way commit the Board to continue my employment. I understand if there is a transfer of my service obligation to another Federal agency or other branch of the Government, this agreement will remain in effect until I have completed my obligation service with that other agency or organization.
6. I agree to obtain approval from the Director of Human Resources of proposed changes in my approved training. These are major changes that include, but are not limited to: incurring additional costs, extending training beyond one year (e.g., 18 months), or withdrawing from the program.

Employee's Signature

Date

Supervisor's Signature

Date